

CLAIMS

What is claimed is:

1. (Original) A network power system for delivering inline power, the system comprising:
 - a power source equipment having at least one output power interface capable of transmitting inline power;
 - at least one powered device having an input power interface capable of receiving inline power; and
 - a first transmission media capable of carrying inline power and having a first end and a second end, wherein the first end is coupled to the at least one output power interface of the power source equipment and the second end is coupled to the input power interface of the at least one powered device,wherein at least one of the power source equipment or the at least one powered device includes a negotiator capable of communicating and resolving at least one inline power allocation issue.
2. (Original) The system as defined in claim 1, wherein the negotiator at least participates in the formation of a negotiated decision with respect to the at least one inline power allocation issue.
3. (Original) The system as defined in claim 1, wherein the negotiator performs at least one response function based on a negotiated decision with respect to the at least one inline power allocation issue.

4. (Original) The system as defined in claim 1, further comprising a non-powered device including a negotiator capable of communicating and resolving at least one inline power allocation issue.

5. (Original) The system as defined in claim 1, wherein the at least one powered device further includes an output power interface capable of transmitting inline power, the system further comprising:

at least a second powered device having an input power interface capable of receiving inline power; and

a second transmission media capable of carrying inline power and having a first end and a second end, wherein the first end is coupled to the output power interface of the at least one powered device and the second end is coupled to the input power interface of the at least a second powered device.

6. (Original) The system as defined in claim 5, wherein the at least a second powered device further includes a negotiator capable of communicating and resolving at least one inline power allocation issue.

7. (Original) A method of inline power allocation for a network power system having at least two components coupled together, wherein at least a first component is a power source equipment capable of transmitting inline power, at least a second component is a powered device capable of receiving inline power, and at least one of the at least two components includes a

negotiator capable of communicating and resolving at least one inline power allocation issue, the method comprising:

- identifying an inline power allocation issue;
- communicating as suitable within the network power system; and
- reaching a negotiated decision in an effort to resolve the identified inline power allocation issue.

8. (Original) The method as defined in claim 7, further comprising responding based on the negotiated decision in an effort to resolve the identified inline power allocation issue.

9. (Original) The method as defined in claim 8, wherein responding comprises reclassifying at least one component in the network power system.

10. (Original) An apparatus for inline power allocation for a network power system having at least two components coupled together, wherein at least a first component is a power source equipment capable of transmitting inline power, at least a second component is a powered device capable of receiving inline power, and at least one of the at least two components includes a negotiator capable of communicating and resolving at least one inline power allocation issue, the apparatus comprising:

- means for identifying an inline power allocation issue;
- means for communicating as suitable within the network power system; and
- means for reaching a negotiated decision in an effort to resolve the identified inline power allocation issue.

11. (Original) The apparatus as defined in claim 10, further comprising means for responding based on the negotiated decision in an effort to resolve the identified inline power allocation issue.

12. (Original) A computer-readable medium having stored thereon computer-executable instructions for performing a method of inline power allocation for a network power system having at least two components coupled together, wherein at least a first component is a power source equipment capable of transmitting inline power, at least a second component is a powered device capable of receiving inline power, and at least one of the at least two components includes a negotiator capable of communicating and resolving at least one inline power allocation issue, the method comprising:

identifying an inline power allocation issue;

communicating as suitable within the network power system; and

reaching a negotiated decision in an effort to resolve the identified inline power allocation issue.

13. (Original) The computer-readable medium as defined in claim 12, wherein the method further comprises responding based on the negotiated decision in an effort to resolve the identified inline power allocation issue.

14. (Original) The computer-readable medium as defined in claim 13, wherein responding comprises reclassifying at least one component in the network power system.

15. (Original) A power source equipment (PSE) for a network power system for delivering inline power, the PSE comprising:
- at least one output power interface capable of transmitting inline power; and
 - at least one negotiator capable of communicating and at least partially resolving at least one inline power allocation issue.
16. (Original) The PSE as defined in claim 15, wherein the negotiator of the PSE is one of a plurality of negotiators in the network power system and the negotiator in the PSE has primary authority for reaching a negotiated decision in an effort to resolve the at least one inline power allocation issue.
17. (Original) The PSE as defined in claim 15, wherein the negotiator of the PSE is one of a plurality of negotiators in the network power system and the negotiator in the PSE has substantially equal authority for reaching a negotiated decision in an effort to resolve the at least one inline power allocation issue.
18. (Original) The PSE as defined in claim 15, wherein the negotiator of the PSE takes the form of a single unit.
19. (Original) The PSE as defined in claim 15, wherein the negotiator of the PSE takes the form of two sub-units with a first sub-unit being centralized and a second sub-unit being associated with the at least one output power interface.

20. (Original) The PSE as defined in claim 19, wherein the second sub-unit of the negotiator of the PSE is inoperative when no inline power is being transmitted from the at least one output power interface.

21. (Original) The PSE as defined in claim 15, wherein the negotiator of the PSE is embedded into a physical layer of the PSE.

22. (Original) The PSE as defined in claim 15, wherein the negotiator of the PSE is capable of performing at least one response function based on a negotiated decision in an effort to resolve the at least one inline power allocation issue.

23. (Original) The PSE as defined in claim 22, wherein the at least one response function includes at least reducing the transmission of inline power from the at least one output power interface.

24. (Original) The PSE as defined in claim 22, wherein the at least one response function includes transmitting a request that a component coupled to the at least one output power interface act to at least reduce the consumption of inline power from the at least one output power interface.

25. (Original) The PSE as defined in claim 22, wherein the at least one response function includes terminating the transmission of inline power from the at least one output power interface to all but one powered device coupled to the at least one output power interface.

26. (Original) The PSE as defined in claim 22, wherein the at least one response function includes reclassifying at least one powered device coupled to the at least one output power interface.

27. (Original) The PSE as defined in claim 15, wherein the negotiator of the PSE maintains at least one piece of information selected from the group consisting of a present total inline power output, a maximum total inline power output, a present inline power output per power interface, a maximum inline power output per power interface, a status of the PSE, and an amount of power supplied to the PSE.

28. (Original) The PSE as defined in claim 15, wherein the negotiator of the PSE considers at least one factor selected from the group consisting of a power interface priority, a powered device priority, a powered device type, a PSE operation mode, a powered device operation mode, a powered device power draw, a time limit, a time schedule, and a power reserve level.

29. (Original) A powered device (PD) for a network power system for delivering inline power, the PD comprising:

an input power interface capable of receiving inline power; and

a negotiator capable of communicating and at least partially resolving at least one inline power allocation issue.

30. (Original) The PD as defined in claim 29, wherein the negotiator of the PD is one of a plurality of negotiators in the network power system and the negotiator in the PD has primary authority for reaching a negotiated decision in an effort to resolve the at least one inline power allocation issue.

31. (Original) The PD as defined in claim 29, wherein the negotiator of the PD is one of a plurality of negotiators in the network power system and the negotiator in the PD has substantially equal authority for reaching a negotiated decision in an effort to resolve the at least one inline power allocation issue.

32. (Original) The PD as defined in claim 29, wherein the negotiator of the PD is inoperative when no inline power is being drawn by the PD from the input power interface.

33. (Original) The PD as defined in claim 29, wherein the negotiator of the PD is embedded into a physical layer of the PD.

34. (Original) The PD as defined in claim 29, wherein the negotiator of the PD is capable of performing at least one response function based on a negotiated decision in an effort to resolve the at least one inline power allocation issue.

35. (Original) The PD as defined in claim 34, wherein the at least one response function includes at least reducing the amount of inline power drawn by the PD from the input power interface.

36. (Original) The PD as defined in claim 34, wherein the PD further comprises an output power interface for transmitting inline power and the at least one response function includes transmitting a request that a component coupled to the output power interface act to at least reduce the consumption of inline power from the output power interface.

37. (Original) The PD as defined in claim 34, wherein the PD further comprises an output power interface for transmitting inline power and the at least one response function includes terminating the transmission of inline power from the output power interface.

38. (Original) The PD as defined in claim 34, wherein the at least one response function includes reclassifying the PD.

39. (Original) The PD as defined in claim 29, wherein the negotiator of the PD maintains at least one piece of information selected from the group consisting of a present power draw, a maximum power draw, a predicted power draw, a PD type, a PD operation mode, a PD Quality-of-Service level, and a PD operating schedule.

40. (Original) The PD as defined in claim 29, wherein the negotiator of the PD considers at least one factor selected from the group consisting of a power source equipment

power interface priority, a PD priority, a PD type, a power source equipment operation mode, a PD operation mode, a PD power draw, a time limit, a time schedule, and a power source equipment power reserve level.